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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,748	08/09/2007	Martin Griesser	AP 10875	1173

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EXAMINER	
JEN, MINGJEN	
ART UNIT	PAPER NUMBER
3664	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/587,748	GRIESSER ET AL.	
	Examiner	Art Unit	
	IAN JEN	3664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-17 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-17 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is /are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 07/28/2006.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Foreign Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the determining of rolling circumference difference from actually determined test variables; rain sensor must be shown or the feature(s) canceled from the claim 1 and 9. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet"

pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1,2, 5,6, 11 - 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gustafsson (WO 01/87647) in view Okawa et al (US Pat No 5591906).

As for claim 1, Guftasson shows the method for indirect tire pressure monitoring by the step of learning of torsion natural frequency for tire from the oscillation behavior of the individual tires (Page 16, lines 1 – Page 17, liens 30; Page 21, lines 1 - 23); determining shift of the torsion natural frequency from actually determined torsion natural frequency and from learnt torsion natural frequency (Page 16, lines 1 – Page 17, lines 30; Page 21, lines 1 – 23; See Page 21, Equation 18); combining the rolling differences with the shift of the torsion natural frequency fp in a joint warning strategy for detecting and warning of tire inflation pressure loss (Page 5, lines 1 - 7 for the combination application; where page 22 for the tire pressure detection loss using rolling difference; see Fig 20; Fig 22,22 for each individual tire; Fig 23 - 25 rolling

difference in each tire; (Page 16, lines 1 – Page 17, liens 30; Page 21, lines 1 – 23 for natural frequency torsion analysis); Guftasson is silent regarding learning of test variables, which describe the rotational movements of the wheels; determining of rolling circumference differences from actually determined test variables and the learnt test variables.

Okawa shows learning of test variables (DIAG, SIDE, AXLE), which describe the rotational movements of the wheels (Col 11, Equation 3 for DIAG; Col 12, lines 17 – 37 for SIDE,AXLE); determining of rolling circumference differences (ΔDIAG, ΔSIDE, ΔAXLE) from actually determined test variables and the learnt test variables (Col 15, lines 1 – Col 16, lines 60). It would have been obvious for one of ordinary skill in the art, to provide the wheel analysis of Okawa, to Guftasson, in order to provide an improved tire pressure estimating method, as taught by Okawa, to Guftasson.

As for claim 2, Guftasson shows the learning operation is not started until an automatically or manually generated signal (reset) (See Fig 17c, Step 1702).

As for claim 5, Guftasson shows initially only the rough position of the torsion natural frequency fp is determined in a wide frequency range, in particular in the frequency range of roughly 20 hertz to roughly 60 hertz, with a coarse frequency resolution, in particular with a frequency resolution of 1 hertz approximately (See Fig 6, Fig 8).

As for claim 6, Guftasson shows subsequently a range is defined around the approximate position of the torsion natural frequency fp, in which the precise position of the torsion natural

frequency fp is determined with a fine frequency resolution, in particular with a frequency resolution of 0.5 hertz approximately (See Fig 17c, Step 1716, 1718).

As for claim 11 – 14, Guftasson shows and a warning regarding tire inflation pressure loss is issued when the shifts of the torsion natural frequencies Δfp of all wheels exceed a previously fixed fine threshold (Page 22, lines 3 - 30); Guftasson is silent a warning regarding tire inflation pressure loss is issued when at least one rolling circumference difference (ΔDIAG, ΔSIDE, ΔAXLE); a warning regarding tire inflation pressure loss is issued only when the correlation between the rolling circumference differences (ΔDIAG, ΔSIDE, ΔAXLE) and the shifts of the torsion natural frequencies Δfp exceeds a predetermined limit value which indicates tire inflation pressure loss with an appropriate likelihood.

Okawa shows a warning regarding tire inflation pressure loss is issued when at least one rolling circumference difference (ΔDIAG, ΔSIDE, ΔAXLE) (Col 8, lines 19 - 28); a warning regarding tire inflation pressure loss is issued only when the correlation between the rolling circumference differences (ΔDIAG, ΔSIDE, ΔAXLE) and the shifts of the torsion natural frequencies Δfp exceeds a predetermined limit value which indicates tire inflation pressure loss with an appropriate likelihood (Col 8, lines 65 – Col 10, lines 50 for frequency torsion; Col 11, lines 30 – Col 12, lines 60 for tire pressure loss). It would have been obvious for one of ordinary skill in the art, to provide the wheel analysis of Okawa, to Guftasson, in order to provide an improved tire pressure estimating method, as taught by Okawa, to Guftasson.

As for claim 15 – 17, Guftasson shows in the joint warning strategy, the (warning) thresholds of the rolling differences for warning of tire inflation pressure loss are adapted depending on the shift of the torsion natural frequency Δfp (Page 5, lines 2 – 5; Page 22, lines 3 – Page 24, lines 15)and on the correlation between the rolling differences (Page 22, lines 3 – Page 24, lines 15), and on the shifts of the torsion natural frequency Δfp and defines an algorithm (Page 25, lines 5 – Page 26, lines 15). Guftasson is silent regarding rolling circumference differences (ΔDIAG, ΔSIDE, ΔAXLE) for warning of tire inflation pressure loss.

Okawa shows a warning regarding tire inflation pressure loss is issued when at least one rolling circumference difference (ΔDIAG, ΔSIDE, ΔAXLE) (Col 8, lines 19 - 28). It would have been obvious for one of ordinary skill in the art, to provide the wheel analysis of Okawa, to Guftasson, in order to provide an improved tire pressure estimating method, as taught by Okawa, to Guftasson.

5. Claim 3, 4, 7 - 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gustafsson (WO 01/87647) in view Okawa et al (US Pat No 5591906) and Toshiharu et al (EP 0895880).

As for claim 3, Gustafsson modified is silent regarding the learning operation is executed while the tires heat up and/or cool down.

Toshiharu et al shows the learning operation is executed while the tires heat up and/or cool down (Para 0015 - 0023). It would have been obvious for one of ordinary skill in the art,

to provide the execution means and method of Toshiharu et al, in order to implement and initialize the operating method of Gustafsson modified.

As for claim 4, Gustafsson is silent regarding the learning operation is executed in several different speed intervals, and/or wheel torque intervals, and/or lateral acceleration intervals.

Okawa et al shows the learning operation is executed in several different speed intervals, and/or wheel torque intervals, and/or lateral acceleration intervals (See Fig 17). It would have been obvious for one of ordinary skill in the art, to provide the wheel analysis of Okawa, to Guftasson, in order to provide an improved tire pressure estimating method, as taught by Okawa, to Guftasson.

As for claim 7, 8, Gustafsson modified is silent regarding the complete heating and/or cooling of the tires is detected from a uniform increase or reduction of the torsion natural frequencies fp of all tires to an almost constant final value; the change of the outside or ambient temperature is evaluated with respect to the heating/cooling of the tires.

Toshiharu et al shows the complete heating and/or cooling of the tires is detected from a uniform increase or reduction of the torsion natural frequencies fp of all tires to an almost constant final value (Para 0030-0035); the change of the outside or ambient temperature is evaluated with respect to the heating/cooling of the tires (Para 0025). It would have been obvious for one of ordinary skill in the art, to provide the means and method of execution of

Toshiharu et al, in order to implement and initialize the operating method of Gustafsson modified.

As for claim 9, Gustafsson is silent regarding a rain sensor is evaluated with respect to the heating/cooling of the tires.

Toshiharu et al shows a rain sensor is evaluated with respect to the heating/cooling of the tires (Para 0017-0020). It would have been obvious for one of ordinary skill in the art, to provide the means and method of execution of Toshiharu et al, in order to implement and initialize the operating method of Gustafsson modified.

As for claim 10, Gustafsson is silent regarding the length of a vehicle immobilization time allows obtaining information about the condition (cold or warm) of the tires.

Toshiharu et la shows the length of a vehicle immobilization time allows obtaining information about the condition (cold or warm) of the tires (Para 0098-0105). It would have been obvious for one of ordinary skill in the art, to provide the means and method of execution of Toshiharu et al, in order to implement and initialize the operating method of Gustafsson modified.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian Jen whose telephone number is 571-270-3274. The examiner can normally be reached on Monday - Friday 8:00-5:00 (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Khoi Tran can be reached on 571-272-6916. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ian Jen/
Examiner, Art Unit 3664
/KHOI TRAN/
Supervisory Patent Examiner, Art Unit 3664